DETAILED ACTION

This communication is a First Action non-Final on the merits. Claims 1-27, after preliminary amendment, are currently pending and have been considered below.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application 20040138 filed in Finland on January 30, 2004, for the benefit of PCT/FI05/00061 on January 28, 2005. It is noted, however, that applicant has not filed a certified copy of the application as required by 35 U.S.C. 119(b).

Claim Objections

2. Claims 2-11, 13-21, 23-27 are objected to because of the following informalities: Claims 2-11 recite "A method according to claim 1" on page 2-4, where "A method" should be "The method " for the antecedent basis of base claim 1. Claims 13-21, 23-27 are objected to with the same reason.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: ***(See MPEP Ch. 2141)***

a. Determining the scope and contents of the prior art;
b. Ascertaining the differences between the prior art and the claims in issue;
c. Resolving the level of ordinary skill in the pertinent art; and
d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

1. Claims 1- 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,856,802 B1, Kinnunen et al. (hereinafter Kinnunen) in view of US 7,171,201 B2, Kim (hereinafter Kim).

As to claim 1, Kinnunen discloses a method for testing a receiver of a wireless messaging device in a mobile communication system (Figs 1-3, digital cellular phone is a wireless messaging device), comprising: generating, in a production stage of the wireless messaging device (col 1, lines 19-21) a test signal which contains physical time-slots (abstract, col 3, lines 7-21, col 3, line 64- col 4, line 21, col 13, lines 1-33, opening multi-slot loop message, assigning multislot channel time slot configuration indicating the physical time-slots in a test signal, also see col 1, lines 34-40, downlink frame with bits, e.g. time slots). Kinnunen also discloses positioning a synchronization sequence supported by the mobile communication system in a time-slot allocated for transmission of system information (Fig 2: 210, SYNC signal, col 7, lines 43-56, Fig 8, col 16, lines 1-12, Fig 9: 910, col 17 line 56 – col 18, line 3).

Kinnunen does not expressly disclose at least one of the time slots is allocated for

transmission of system information from a base transceiver station of the mobile communication system to the messaging device. However, Kinnunen discloses signaling messaging (including system information) being decoded which implies the system information being received at certain time slots (Kinnunen: Figs 3-4). Nevertheless, Kim, in the same field of endeavor, teaches that a mobile terminal receives and restors system information from the timing information obtained from the SCH, (Kim: col 2, lines 12-26). Therefore, consider Kinnunen and Kim's teachings together, it would have been obvious to one of skill in the art at the time of invention to incorporate Kim's teachings on system information being transmitted by a base station and received by a mobile station at certain time slot (SCH) as appropriately defined in over the air signaling protocol in the test setting environment.

As to claims 2 and 9, Kinnunen as modified discloses a method according to claim 1 further comprising: converting the test signal to radio frequency (Kinnunen: Figs 1, 3); and transmitting the test signal to the receiver at the radio frequency (Kinnunen: Figs 1, 3), transmitting the test signal to the receiver via an antenna connection of the receiver (Kinnunen: Fig 3, col 8, lines 3-38). It is also well known practice and specified in the testing standards in the field of communication testing, a production stage testing should include not only baseband, but the entire radio chain.

As to claim 3, Kinnunen as modified discloses a method according to claim 1, wherein positioning comprises positioning a frequency synchronization sequence supported by

the mobile communication system in a time-slot allocated for transmission of system information (Kim: Fig 1, col 1, lines 39-48), the method further comprising: identifying the frequency synchronization sequence from the test signal (Kim: col 1, lines 39-48, col 3, lines 53-60); and frequency-synchronizing the receiver by means of the frequency synchronization sequence (Kinnunen: Fig 8:804, 805, col 16, lines 1-16, Kim: col 3, lines 61-67).

As to claim 4, Kinnunen as modified discloses a method according to claim 1, wherein positioning comprises positioning a time synchronization sequence supported by the mobile communication system in a time-slot allocated for transmission of system information (see analysis of claim 1), the method further comprising: identifying the time synchronization sequence from the test signal (Kinnunen: col 7, lines 9-28, a PN sequence generates the time sync sequence); and time-synchronizing the receiver by means of the time synchronization sequence (Kinnunen: Fig 2, col 7, lines 29-42, time synchronization is achieved by comparing the PN sequences between the tester and the mobile station under test).

As to claim 5, Kinnunen as modified discloses a method according to claim 1, wherein positioning comprises: positioning a frequency synchronization sequence supported by the mobile communication system in the first time-slot allocated for transmission of system information (Kim: Fig 1:10, col 1, lines 39-43); and positioning a time synchronization sequence supported by the mobile communication system in the

second time-slot allocated for transmission of system information in such a way that the interval between the front edge of the first time-slot and the front edge of the second time-slot is 8 time-slots (Kim Fig 1:12, col 1, lines 43-54).

As to claim 6, Kinnunen as modified discloses a method according to claim 1, wherein generating comprises generating a test signal containing a 104 frame multi-frame which has a plurality of time-slots allocated for transmission of system information, as a reporting period in GSM standard (col 11, lines 29-34) and also discloses positioning synchronization sequences supported by the mobile communication system in time-slots allocated for transmission of system information (see analysis in claims 1 and 5). Kinnunen as modified does not expressly disclose to generate 51-frame multi-frame, and the synchronization sequence is repeated at least 11 times in the 51-frame multi-frame. However, consider Kinnunen as modified's teachings as a whole, it would have been obvious to generate long enough of test signal including a plurality of time slots, such as 51-frames repeating numerous times in order to provide a stable and repeatable test strings for various testing purposes.

As to claim 7, Kinnunen as modified discloses a method according to claim 1, further comprising: positioning a test sequence in the test signal (Kinnunen: abstract, col 3, lines 30 - 34); receiving the test signal (Kinnunen: col 3, line 14); identifying the test sequence from the test signal (Kinnunen: col 3, lines 15-16, known form of test signal being the test sequence); generating a variable characterizing the receiver by means of

the test sequence (Kinnunen: Fig 8, col 16, lines 17-34); transmitting a signal containing the receiver-characterizing variable from the wireless messaging device (Kinnunen: Fig 8, col 16, lines 35-44); and receiving the signal containing the receiver-characterizing variable from the wireless messaging device (Kinnunen: Fig 8, col 16, lines 45- 65).

As to claim 8, Kinnunen as modified discloses a method according to claim 1, wherein positioning comprises positioning a synchronization sequence supported by the mobile communication system in a time-slot allocated for transmission of system information (see analysis in claims 3, 10), which synchronization sequence contains at least one of the following: the training sequence code of a synchronization channel according to the GSM standard (Kinnunen: Figs 4-5, 7); bits of a frequency correction channel according to the GSM standard (Kinnunen: Figs 4-5, 7 col 10, lines 29-30, col 14, lines 25-26).

As to claim 10, Kinnunen as modified discloses a method according to claim 1, a control unit as part of the testing system including a base station subsystem and a mobile station (Kinnunen: Fig 1, Fig 8: 803) and indicates the control unit advantageously being a computer (Kinnunen: col 15, lines 56-67, i.e. computer program can be loaded for testing purpose). Such program can also be loaded in the base station for receiving the test signal as input; identifying the synchronization sequence from the test signal; and synchronizing the receiver by means of the synchronization sequence (see Kinnunen: Fig 7 for the computer program execution flowchart, also see analysis of claim 3 for particularly frequency synchronization). In fact, it is common practice and well known in

the field a test system would have test program loaded in a computer or tester (as part of the test bench) to perform test cases defined in the related test standard such as IS-98 for cdma physical layer performance testing.

As to claim 11, Kinnunen as modified discloses a method according to claim 1, further comprising identifying the synchronization sequence from the test signal (Kinnunen: Fig 8, col 16, lines 1-16); and synchronizing the receiver by means of the synchronization sequence (Kinnunen: Fig 8, col 16, lines 1-16. The transmission timetable is arranged and known by the mobile stations, therefore identifiable by the mobile station).

As to claim 12, claim 12 is a system claim that encompasses and necessitates method claim 1. Rejection of claim 1 is therefore incorporated herein (see analysis and rejection above).

As to claim 13, it is rejected with the same reason set forth in claim 2.

As to claim 14, it is rejected with the same reason set forth in claim 9.

As to claims 15-19, they are rejected with the same reason set forth in claim 3, 5-8, respectively (see analysis and rejection above).

As to claim 21, it is rejected with the same reason set forth in claim 10.

As to claim 20, Kinnunen as modified discloses a system according to claim 12, wherein the system further comprises a connection unit (Kinnunen: Fig 8: 803, col 15, lines 59-67) that can be used for receiving from the wireless messaging device a signal that

contains a variable characterizing the receiver (Kinnunen: col 16, line 66 – col 17, line 25).

As to claim 22, claim 22 recites a computer program that performs claimed invention recited in method claim 1 and system claim 12. Rejection of claim 1 is therefore incorporated herein.

Claims 23-27 according to claim 22, are rejected with the same reason set forth in claims 3-4, 6-8, respectively (see analysis and rejection above).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to QUN SHEN whose telephone number is (571)270-7927. The examiner can normally be reached on Monday through Thursday, 9:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis West can be reached on 571-272-7859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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